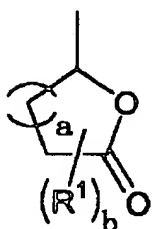


WHAT IS CLAIMED IS:

1. A radiation-sensitive resin composition comprising:

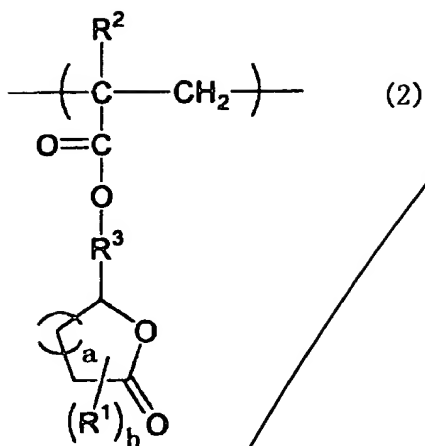
(A) an acid-dissociable group-containing resin which is insoluble or scarcely soluble in alkali and becomes alkali soluble when the acid-dissociable group dissociates, the resin comprising a lactone cyclic structure of the following formula (1),



wherein a is an integer from 1-3, b is an integer from 0-9, and R^1 represents a monovalent organic group, and

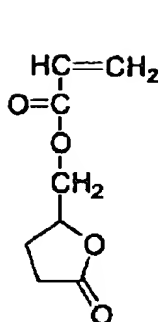
(B) a photoacid generator.

2. The radiation sensitive resin composition according to claim 1, wherein the resin of component (A) comprises a recurring unit of the following formula (2) and at least one other recurring unit having an alicyclic hydrocarbon skeleton in the main chain and/or side chain,

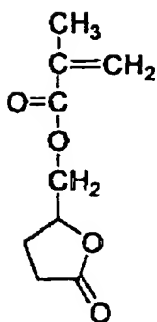


wherein a is an integer from 1 to 3, b is an integer from 0 to 9, R^1 represents a monovalent organic group, R^2 represents a hydrogen atom or a methyl group, and R^3 represents a linear or branched divalent hydrocarbon group of which the main chain has 1-5 carbon atoms.

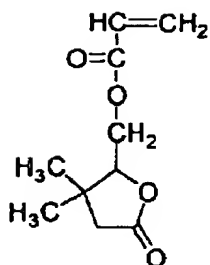
3. The radiation-sensitive resin composition according to claim 2, wherein the recurring unit of the formula (2) in the resin of component (A) is a recurring unit obtained from an (meth)acrylic acid derivative represented by the following formulas (6-1), (6-2), (6-25), or (6-26):



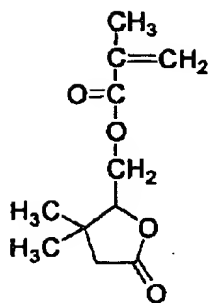
(6-1)



(6-2)

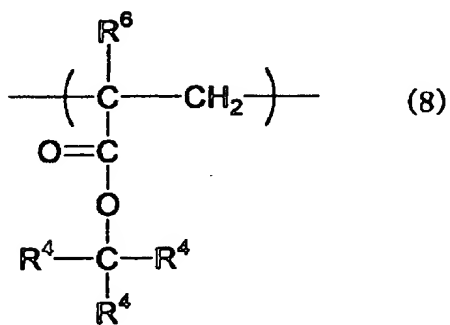


(6-25)



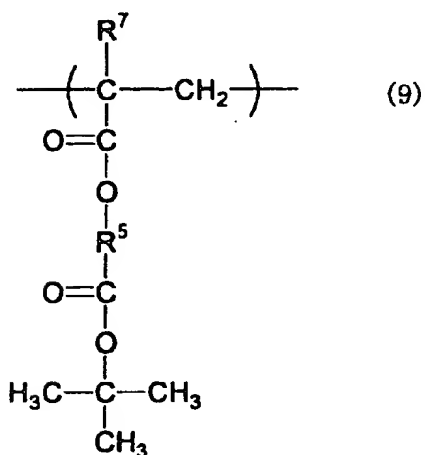
(6-26)

4. The radiation sensitive resin composition according to claim 2, wherein the at least one other recurring unit is selected from the group consisting of the recurring unit of the following formula (8), the recurring unit of the following formula (9), and the recurring unit of the following formula (10):

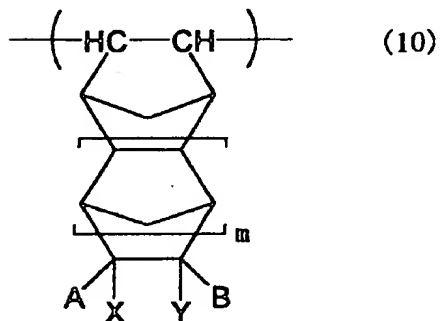


wherein R^4 individually represents a linear or branched alkyl group having 1-4 carbon atoms or a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, or any two of R^4 s form in combination a divalent

alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, with the remaining R⁴ being a linear or branched alkyl group having 1-4 carbon atoms or a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, and R⁶ is a hydrogen atom or a methyl group,



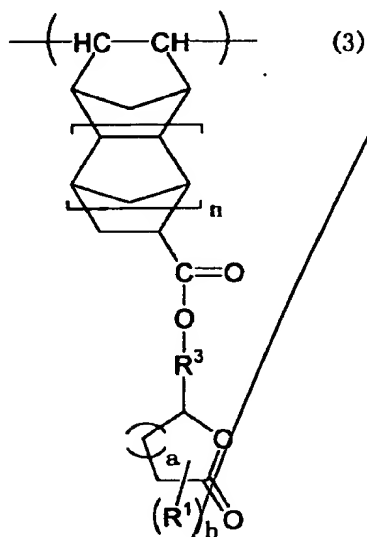
wherein R⁵ represents a linear or branched divalent hydrocarbon group having 1-4 main chain carbon atoms or a divalent alicyclic hydrocarbon group having 3-15 carbon atoms, and R⁷ is a hydrogen atom or a methyl group, and



wherein A and B individually represent a hydrogen atom or an

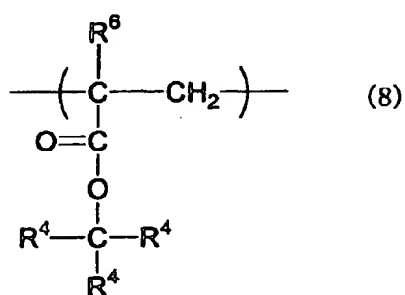
acid-dissociating group having 20 or less carbon atoms which dissociates and produces an acidic functional group in the presence of an acid, at least one of A and B being the acid-dissociating group, X and Y individually represent a hydrogen atom or a linear or branched monovalent alkyl group having 1-4 carbon atoms, and m is an integer of 0 to 2.

5. The radiation sensitive resin composition according to claim 1, wherein the resin of component (A) comprises a recurring unit of the following formula (3) and at least one other recurring unit having an alicyclic hydrocarbon skeleton in the main chain and/or side chain:

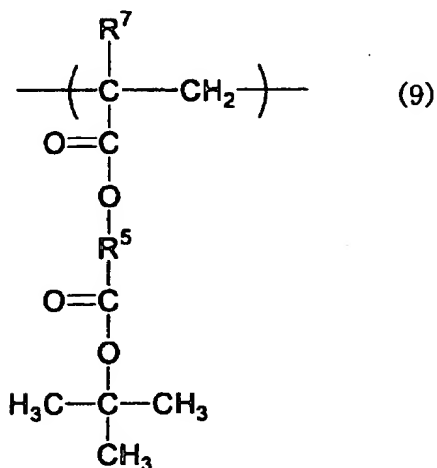


wherein a is an integer from 1 to 3, b is an integer from 0 to 9, n is an integer from 0 to 2, R^1 represents a monovalent organic group, and R^3 represents a linear or branched divalent hydrocarbon group of which the main chain has 1-5 carbon atoms.

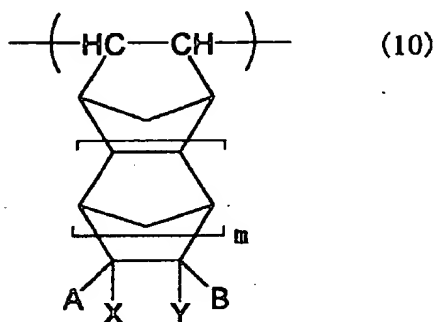
6. The radiation sensitive resin composition according to claim 5, wherein the at least one other recurring unit is selected from the group consisting of the recurring unit of the following formula (8), the recurring unit of the following formula (9), and the recurring unit of the following formula (10):



wherein R⁴ individually represents a linear or branched alkyl group having 1-4 carbon atoms or a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, or any two of R⁴s form in combination a divalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, with the remaining R⁴ being a linear or branched alkyl group having 1-4 carbon atoms or a monovalent alicyclic hydrocarbon group having 4-20 carbon atoms or a derivative thereof, and R⁶ is a hydrogen atom or a methyl group,



wherein R⁵ represents a linear or branched divalent hydrocarbon group having 1-4 main chain carbon atoms or a divalent alicyclic hydrocarbon group having 3-15 carbon atoms, and R⁷ is a hydrogen atom or a methyl group, and



wherein A and B individually represent a hydrogen atom or an acid-dissociating group having 20 or less carbon atoms which dissociates and produces an acidic functional group in the presence of an acid, at least one of A and B being the acid-dissociating group, X and Y individually represent a hydrogen atom or a linear or branched monovalent alkyl group

having 1-4 carbon atoms, and m is an integer of 0 to 2.

7. The radiation-sensitive resin composition according to claim 2, wherein the content of the recurring unit of the formula (2) in the resin of component (A) is 10-70 mol%.

8. The radiation-sensitive resin composition according to claim 5, wherein the content of the recurring unit of the formula (3) in the resin of component (A) is 10-70 mol%.

9. The radiation-sensitive resin composition according to claim 2, wherein the total of the content of the recurring units of the formulas (8) to (10) in the resin of component (A) is 5-70 mol%.

10. The radiation-sensitive resin composition according to claim 5, wherein the total of the content of the recurring units of the formulas (8) to (10) in the resin of component (A) is 5-70 mol%.

11. The radiation-sensitive resin composition according to claim 1, wherein the resin of component (A) has a polystyrene-reduced weight average molecular weight by gel permeation chromatography of 5,000 to 100,000.

12. The radiation-sensitive resin composition according to claim 1, wherein the photoacid generator of component (B)

is at least one compound selected from the group consisting of an onium salt, halogen-containing compound, diazoketone compound, sulfone compound, and sulfonic acid compound.

5 13. The radiation-sensitive resin composition according to claim 1, further comprising an acid diffusion controller.

10 14. The radiation-sensitive resin composition according to claim 13, wherein the acid diffusion controller is a nitrogen-containing organic compound.

15 15. The radiation-sensitive resin composition according to claim 1, further comprising an alicyclic additive having an acid-dissociating organic group.

20 16. The radiation-sensitive resin composition according to claim 1, further comprising at least one solvent selected from the group consisting of a linear or branched ketone, cyclic ketone, propylene glycol monoalkyl ether acetate, alkyl 2-hydroxypropionate, and alkyl 3-alkoxypropionate.

Add 13